DEC-27-2005 22:44 FROM: JASON Z LIN

4088677437

TO: USPTO

P.002/012

Scrial Nr.: 10/829,138

Art Unit: 2874

04150-UPS

AMENDMENTS TO THE SPECIFICATION:

Page 3, amend paragraph [0004] as:

[0004] Based on the foregoing description, the package of a typical fiber optics device

such as an optical add/drop filter according to a prior art is first to form tightly bonding

sub-assemblies by permeating scalants into narrow gaps between various components of

the sub-assemblies. Then a soldering process is used to join these sub-assemblies together

as a whole into an airtight device. However the soldering process has a number of

disadvantages. First, during the manufacturing process the heat generated by the soldering

process would affect the device components and the light coupling to adjust the relative

positions of sub-assemblies becomes difficult, which is not an easy task. The soldering

process will also introduce extra stresses into the device, which will be released gradually

afterwards and the functionality and long-term stability of the device will therefore be

affected. In addition, two additional metallic tubes and two additional glass tubes are

required. Moreover, the metallic tubes and the bousing tube have to be plated with gold

for alloying with the solder tin. These not only increase the dimension of the device, but

also increase its material cost.

Page 5, amend paragraph [0007] as:

[0007] Compared to the prior arts, the present invention basically permeates sealants

into the narrow gaps between various device components so that the device can achieve

be achieved hermetical packaging. As a soldering process is avoided during light

DEC-27-2005 22:44 FROM: JASON Z LIN

4088677437

TO:USPTO

P.003/012

Scrial Nr.: 10/829,138

Art Unit: 2874

04150-UPS

aligning, a fiber optics device with better optical performance, long-term stability, and

lower cost can be obtained.

Pages 8-9, amend paragraph [0019] as:

[0019] In addition, the section of the fiber 272 whose length is dl is reserved to

buffer the stress resulted from temperature variations. Due to a flexibility of the fiber 272,

this section of the fiber 272 will be bended as the fiber 272 is under compression resulted

from a temperature dropping from a high temperature to a low temperature and the

housing tube 243 contracting more than the fiber optics sub-assembly 310 does. As

shown in FIG. 4, the fiber 272 is bended into 272c. If the curvature of 272c has a

diameter larger than 40mm, such a bending will not cause any damage or functional

degradation to the fiber optics device. FIG. 5 shows the relationship of the reserved length

d1 of the fiber 272 versus the thermal expansion coefficient of the housing tube 243

under the conditions that the inner section 320 has a length 20mm, the thermal expansion

coefficient of the fiber optics sub-assembly 310 is 7×10^{-6} /°C, and the thermal expansion

coefficient of the fiber is 0.5×10^{-6} /°C. As shown in FIG. 5, the reserved length d/ of the

fiber 272 has to be longer as the materials used for the metal housing tube 243 has a

thermal expansion coefficient more greater than that of the fiber optics sub-assembly 310.

The free space between the single fiber pigtail 220 and the sleeve 242 allows the section

of the fiber 272 to expand and bend freely as shown in FIG. 4.

Pages 10-11, amend paragraph [0024] as:

[0024] Using sealants in the aforementioned assembly methods will contribute to a

DEC-27-2005 22:44 FROM: JASON Z LIN

4088677437

TO: USPTO

P.004/012

Serial Nr.: 10/829,138

Art Unit: 2874

04150-UPS

lower cost. However, if cost is not an issue, some variations can be applied to the assembly methods based on a same packaging structure described above. In FIGS. 3, 6, 7, and 8, tight bonding and air-tightness between the housing tube 243 and the housing cap 241, and between the housing tube 243 and the sleeve 242 can also be achieved using tin soldering or laser welding. The difference between the tin soldering or laser welding here and those used in prior arts lies in that no light coupling is required in the packaging structures according to the present invention as the light coupling is already done between the components of the fiber optics sub-assemblies 310 and 330. Attention therefore only has to be focused on not bending to-bend the fibers severely. In this way, fiber optics devices can be packaged quickly without sacrificing their optical performance. Similarly, tin soldering or glass soldering can also be used between the sleeve 241 and the fibers 272a and 273a for fast packaging.